This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1.   (Currently Amended)   A method for erasing data recorded in a data storage device in which a data bit is originally written onto a polymeric surface carried by a silicon substrate by applying a first combination of heat energy and mechanical force to the polymeric surface via a tip to form a pit in the surface representative of the data bit by local deformation of the polymeric surface, the method comprising applying a write current to the tip to heat the tip to a temperature of the order of 700 degrees centigrade level sufficient to locally deform the polymer layer thereby causing the tip to indent the surface of the polymer layer and leave a pit of a diameter of about 40 nm and surrounded by a ring of polymer substrate material raised above the polymer layer and applying a second combination of energy and mechanical force via the tip to prerecorded pits of the polymeric surface to be erased, the second combination being different to the first combination, and forming new pits overlapping pits representative of prerecorded data to be erased to substantially level the polymeric surface by performing the write operation to overwrite pits to be erased with a greater density of new pits overlapping each other so that each new pit erases the immediately preceding pit, the overlapping new pits merging with each other and the pre-recorded pit to be erased to substantially level the polymer surface to a level where the erased, pre-recorded bit is not detected as a data bit during a read operation.

second combination of energy and mechanical force via the tip to prerecorded pits of the polymeric surface to be erased, the second combination being different to the first combination, and forming new pits overlapping pits representative of prerecorded data to be erased to substantially level the polymeric surface by performing the write operation to overwrite pits to be erased with a greater density of new pits overlapping each other so that each new pit erases the immediately preceding pit, the overlapping new pits merging with each other and the pre-recorded pit to be erased to substantially level the polymer surface to a level where the erased, pre-recorded bit is not detected as a data bit during a read operation.

2.   (Originally Presented)   A method as claimed in claim 1, wherein the force applied in the first combination is greater than the force applied in the second combination.

3.   (Originally Presented)   A method as claimed in claim 2, wherein the energy applied in the first combination is greater than the energy applied in the second combination.

4.   (Canceled)

5.   (Originally Presented)   A method as claimed in claim 1, wherein the forming of the new pits comprises offsetting the new pits relative to the deformations representative of the prerecorded data to be erased.

6.   (Originally Presented)   A method as claimed in claim 5, wherein the forming of the new pits comprises forming a line of new pits in which each pit overlaps the immediately preceding pit.

7.   (Currently Amended)   A data processing system comprising: a polymeric data storage surface carried on a silicon substrate; a tip in contact with the polymeric surface and moveable relative thereto; and a controller operable, in a write mode, to apply a first

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combination of thermal energy and mechanical force to the polymeric surface via [[[a]]] the tip to form a pit in the polymeric surface representative of the data bit by local deformation of the polymeric surface and, in an erase mode, to apply a second combination of thermal energy and mechanical force via the tip to prerecorded pits of the polymeric surface to be erased, the second combination being different to the first combination, and to control the tip to form new pits with a greater density of new pits overlapping each other, the overlapping new pits merging with each other and the pre-recorded pit to be erased to substantially level the polymer surface to a level where the erased pit was, so that each new pit erases the immediately preceding pit, the new pits overlapping pits representative of prerecorded data to be erased to substantially level the polymeric surface.

8.   (Originally Presented)   A system as claimed in claim 7, wherein the force applied in the first combination is greater than the force applied in the second combination.

9.   (Originally Presented)   A system as claimed in claim 8, wherein the energy applied in the first combination is greater than the energy applied in the second combination.

10.   (Canceled)

11.   (Currently Amended)   A system as claimed in claim [[[1]]] 7, wherein the controller is operable to control offset of the new pits relative to the deformations representative of the prerecorded data to be erased.

12.   (Currently Amended)   A system as claimed in claim 11, wherein the controller is [[[to]]] operable to control to the tip to form a line of new pits in which each pit overlaps the immediately preceding pit.

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13. (Originally Presented)   A system as claimed in claim 12, wherein the controller is operable to control offset the new pits relative to the deformations representative of the prerecorded data to be erased.

14. (Originally Presented)   A system as claimed in claim 13, wherein the controller to operable to control to the tip to form a line of new pits in which each pit overlaps the immediately preceding pit.